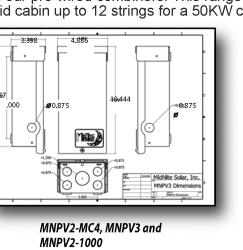
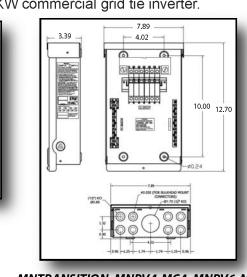
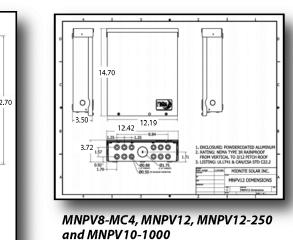
# **Exhibit D Key Equipment Data Sheets**

MIDNITE SOLAR'S
PV Transition Boxes & Combiners MIDNITE SOLAR INC.

MidNite Solar offers a range of PV Combiners from our MNPV3 to the MNPV12v to the MNPV10-1000 volt to all our pre-wired combiners. This range of combiners accommodates PV systems as small as a two string off grid cabin up to 12 strings for a 50KW commercial grid tie inverter.









MNTRANSITION, MNPV4-MC4, MNPV6-MC4, MNPV6, MNPV6-250 and MNPV4-1000 MidNite Solar DV Combiner Specifications

	MNPV2-MC4, MNPV3 and MNPV2-1000	MNTRANSITION, MNPV4-MC4, MNPV6-MC4, MNPV6,MNPV6-250 and MNPV4-1000	MNPV8-MC4, MNPV12, MNPV12-250 and MNPV10-1000
Enclosure rating	Outdoor Rainproof Type 3R	Outdoor Rainproof Type 3R	Outdoor Rainproof Type 3R
Enclosure material	Powder coated aluminum with stainless hardware	Powder coated aluminum with stainless hardware	Powder coated aluminum with stainless hardware
Mounting options and angle	Vertical wall mount, pole mount or sloped roof mount to 14 degrees incline (3 in 12 roof pitch)	Vertical wall mount, pole mount or sloped roof mount to 14 degrees incline (3 in 12 roof pitch)	Vertical wall mount, pole mount or sloped roof mount to 14 degrees incline (3 in 12 roof pitch)
Number of PV strings	MNPV2-MC4 two strings using fuses up 600 volts MNPV3 three strings using breakers up to 150 volts or two strings using fuses up to 600 volts MNPV2-1000 two strings using fuses up to 1000 volts	MNPV4-MC4 four strings using fuses up to 600 volts MNPV6-MC6 six strings using fuses up to 600 volts MNPV6 six strings using 150 volt breakers or four strings using fuses MNPV4-1000 four strings with fuses up to 1000 volts MNTRANSITION four strings in, 2 per channel.	MNPV8-MC4 eight strings using included fuses up to 600 volts MNPV12-600-X2 two strings of non isolated up to 600 volts using included breakers MNPV12 twelve strings using breakers up to 150 volts or ten strings using fuses up to 600 volt MNPV12-250 six strings using using breakers up to 300 volt MNPV10-1000 10 strings using fuses up to 1000 volts
Maximum number of output circuits	1 for all	MNTRANSITION, MNPV4-MC4, MNPV6 & MNPV4-1000 is two, MNPV6-250 is one	2 for all
Wire range for string input	MNPV2-MC4 NA uses MC4 connectors, MNPV3 & MNPV2-1000 14-6 AWG	MNPV4-MC4 NA uses MC4 connectors MNPV6, MNPV6-250 & MNPV4-1000, 14-6 AWG MNTRANSITION 14-6 AWG	MNPV8-MC4 NA uses MC4 connectors MNPV12-600-X2 14-6 AWG MNPV12 and MNPV12-250 14-6 AWG
OCPD Included	MNPV2-MC4 - YES MNPV3 & MNPV2-1000 - NO	MNPV4-MC4 & MNPV6-MC6 - YES MNPV6, MNPV6-250 & MNPV4-1000 - NO MNTRANSITION - No none needed	MNPV8-MC4 & MNPV12-600-X2 - YES MNPV12, MNPV12-250 & MNPV10-1000 - NO
Maximum OCPD rating	30 amp with fuses and 63 amps with 150 volt breakers	30 amp with fuses, 63 amps with 150 volt breakers and 50 amps with 300 volt breakers	30 amp with fuses, 63 amps with 150 volt breakers and 50 amps with 300 volt breakers 20 amps with 600 volt breakers
Maximum output amps	60 amps for all	80 amps for fused, 120 amp for breakers 180 amps per channel for MNTRANSITION	200 Amps with Fuses and 150 volt breakers, 168 amps with 300 volt breakers
Output wire range	14 to 1/0 AWG	14 to 1/0 AWG	14 to 1/0 AWG (Except MNPV12-600-X2 it is #6
Lug temperature rating	90 deg C	90 deg C	90 deg C
Deadfront	Custom molded plastic deadfront	Custom molded plastic deadfront	Custom molded plastic deadfront
Lockable	Yes	Yes	Yes
Rating	UL1741	UL1741	UL1741

17722 - 67th Ave NE Arlington, WA 98223 PH 360.403.7207 FAX 360.691.6862

#### MNPV10, MNPV12 Combiner Instructions (continued)

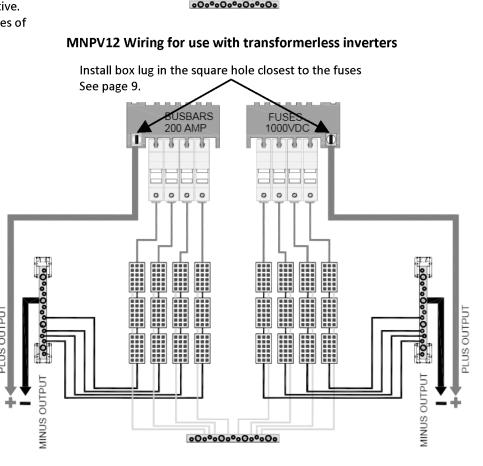
Install box lug in the square hole closest to the fuses Non-Isolated / Transformerless configuration. In this configuration the combiner is separated into two halves. One side combines and fuses the negative and the other side fuses and combines the positive. Overcurrent protection is required by the NEC on both the positive and the negative wires in from the solar panels. The MNPV12 can accomplish this for up to five strings.

The NEC requires that the ungrounded conductor(s) in from the solar panels must be overcurrent protected. Transformerless systems do not ground either the positive or the negative. That is why protection is required for both sides of

# Wiring for two charge controllers.

In this configuration the combiner acts as two combiners. Two separate busbars are provided for combining the negatives and the positives are fuse protected then fed into two separate busbars. The ground is common. Each half can have up to five touch safe fuseholders or six 150 Volt fuses or three 300 Volt circuit breakers

**7** | Page



MNPV12 Wiring for use with two charge controllers with separate negatives

10-259-1 REV: D

# **YASKAWA**

# PVI 50TL & PVI 60TL

3-Ph Transformerless Commercial String Inverters

#### Features

- Integrated arc fault protection
- UL 1741SA listed 3 MPPTs with 5 inputs each
- Integrated DC and AC disconnects
- AC terminals compatible with copper and aluminum conductors
- Modbus communications
- Internal data logger • 0 - 90° installation orientation
- Remote firmware upgrades
- Remote diagnostics
- Compatible with certain MLPE for

#### module-level rapid shutdown\*

 Shade cover DC fuse bypass

Options

Web-based monitoring



Yaskawa Solectria Solar's PVI 50TL and PVI 60TL are grid-tied, transformerless three-phase inverters designed for ground mount, rooftop and carport arrays and can be installed from 0 - 90 degrees. The PVI 50/60TL inverters are the most reliable, efficient and cost effective in their class. They come standard with AC and DC disconnects, three MPPTs, a 15-position string combiner, remote diagnostics, remote firmware upgrades and various protection features. Options include shade cover, DC combiner fuse bypass, and web-based monitoring.

**SOLECTRIA SOLAR** 

#### PVI 50TL & PVI 60TL

	PVI 50TL	PVI 60TL		
DC Input				
Absolute Maximum Input Voltage	1000 VDC	1000 VDC		
Maximum Power Input Voltage Range (MPPT)	480-850 VDC	540-850 VDC		
Operating Voltage Range (MPPT)	200-950 VDC	200-950 VDC		
Maximum Operating Input Current	108 A (36 A per MPPT) 3	114 A (38 A per MPPT) 3		
Number of MPP Trackers  Maximum Available PV Current (Isc x 1.25)				
Maximum Available PV Gurrent (ISC x 1.25)	204 A (68 A per MPPT)	204 A (68 A per MPPT)		
	75 kW (30 kW per MPPT)	90 kW (33 kW per MPPT)		
Start Voltage AC Output	330 V	330 V		
Nominal Output Voltage	480 VAC, 3-Ph/PE/N	480 VAC, 3-Ph/PE/N		
	-12/+10%	-12/+10%		
AC Voltage Range (Standard)	50 kW / 50 kVA / 60.2 A	60 kW / 60 kVA / 72.3 A		
PF=1.00 - Real/Apparent Power/Output Current				
PF=+/-0.91 - Real/Apparent Power/Output Current	50 kW / 55 kVA / 66.2 A	60 kW / 66 kVA / 79.4 A		
Nominal Output Frequency	60 Hz	60 Hz		
Output Frequency Range	57-63 Hz	57-63 Hz		
Power Factor	Unity, >0.99 (Adjustable 0.8 leading to 0.8 lagging)	Unity, >0.99 (Adjustable 0.8 leading to 0.8 lagging)		
Fault Current Contribution (1 Cycle RMS)	55 A	55 A		
Total Harmonic Distortion (THD) @ Rated Load	<3%	<3%		
Recommended OCPD Device	90 A	100 A		
AC Surge Protection	Type II MOV, 1240\	/c, 15kA ltm (8/20μ)		
Efficiency				
Peak Efficiency	99.0%	99.0%		
CEC Efficiency	98.5%	98.5%		
Tare Loss	< 2 W	< 2 W		
Integrated String Combiner				
Fused Inputs	15 Fused Positions (5 Positions per MPP)	T) 15 A Standard (20, 25, 30 A accepted)**		
Temperature	2005 1 14005 ( 2000 1 2000) 1	10005 ( 5000)		
Ambient Temperature Range		Derating occurs over +122°F (+50°C)		
Storage Temperature Range		um to +158°F (+70°C)		
Relative Humidity (non-condensing)		95%		
Operating Altitude	13,123 ft (4,000 m) Derating o	occurs from 9,842.5 ft (3,000 m)		
Communications	0 0 /5	2.775		
Modbus Protocol		SunSpec (FW 11.0 +) / Proprietary		
SolrenView Web-Based Monitoring Service		ional		
Revenue Grade Metering		, External		
Communication Interface		J and Ethernet TCP/IP		
Remote Firmware Upgrades		ndard		
Remote Diagnostics	Star	ndard		
Features & Protections		ad and		
Arc-Fault		ndard		
Smart Grid Features	L/HVHT, L/HFRT, Volt-Var, Frequency-V	Vatt and Volt-Watt, Soft-Start, Soft-Step		
Testing & Certifications	III 171101 0010 III 17777 00	A 000 0 11107 1 IEEE1517 - 0011		
Safety Listings & Certifications		A-C22.2 #107.1, IEEE1547a-2014		
Advanced Grid Support Functionality		JL 1741SA		
Testing Agency		SA		
FCC Compliance	FCC F	Part 15		
Warranty				
Standard Limited Warranty	10 \	Years		
Enclosure				
Acoustic Noise Rating		t room temperature		
AC/DC Disconnect		Illy-integrated		
Mounting Angle***		I (vertical, angled, flat)		
Dimensions (H x W x D)		,000 mm x 600 mm x 260 mm)		
Weight		; Wiring Box: 33 lbs (15 kg)		
Enclosure Rating and Finish	Type 4X; Polyester Polyester	wder Coated Aluminum		

#### \*Please inquire about compatible Module-Level Power Electronics (MLPE) \*\*Yaskawa Solectria Solar does not supply optional fuses sizes

Yaskawa Solectria Solar 360 Merrimack Street Lawrence, MA 01843

solectria.com

**SOLECTRIA SOLAR** 

1-978-683-9700 inverters@solectria.com

DOCR-070642-S | November 2019 © 2019 Yaskawa Solectria Solar YASKAWA



## VSUN390-72BMH-DG

High Efficiency Low LID **Bifacial PERC Technology** VSUN390-72BMH-DG VSUN385-72BMH-DG VSUN380-72BMH-DG VSUN375-72BMH-DG

19.40% Module efficiency 12<sub>years</sub> Material & Workmanship warranty

Linear power output warranty

30<sub>years</sub>

390W Highest power output

P-type PERC bifacial cell technology

Up to 30% more enegy yield due to the back side power generation

Low LCOE

Minimize micro-crack and free of snail trails

Outstanding temperature coefficient Excellent performance under

Certified for salt/ammonia corrosion resistance

Load certificates: wind to 2400Pa and snow to 5400Pa

low light conditions

Number of years 10 years 15 years 20 years 25 years 30 years

Invested by Fuji Solar, VSUN is a Japanese solar module solutions provider located in Tokyo that offers Japanese quality solar technologies globally. The group's business started in Japan in 2006, later spreading to North America, Southeast Asia, and EMEA.

Innovative & Smart - VSUN has been committed to providing greener, cleaner, and more intelligent renewable energy solutions. It is focusing on the new energy market and the development of customized and

All information and data are subject to change without notice.

A Sub-company of **FUJI SELAR** 







vsun@vietnamsunergy.com www.vsun-solar.com

#### **Electrical Characteristics at Standard Test Conditions(STC)**

Module Type	VSUN390-72BMH-DG	VSUN385-72BMH-DG	VSUN380-72BMH-DG	VSUN375-72BMH-DG	
Maximum Power - Pmax (W)	390	385	380	375	
Open Circuit Voltage - Voc (V)	49.3	49	48.8	48.5	
Short Circuit Current - Isc (A)	10.11	10.03	9.94	9.85	
Maximum Power Voltage - Vmpp (V)	40.6	40.4	40.2	39.9	
Maximum Power Current - Impp (A)	9.61	9.53	9.46	9.4	
Module Efficiency	19.40%	19.15%	18.91%	18.66%	
Standard Test Conditions (STC): irradiance 1,000 W/m²; AM 1,5; module temperature 25°C. Tolerance of Pmpp: 0~+3%.					
Measuring uncertainty of power: ±3%.					

Electrical Characteristics with different rear side power gain(reference to 385 front)

icctricar	Characteristics	with different real	side power	gamererence te	Jos Holle,
Pmax (W)	Voc (V)	Isc (A)	Vmpp (V)	Impp (A)	Pmax gain
404	49.0	10.53	40.5	10.01	5%
424	49.0	11.03	40.5	10.48	10%
462	49.1	12.04	40.4	11.44	20%
481	49.1	12.54	40.4	11.91	25%

**Maximum Ratings** 

45°C(±2°C) Maximum System Voltage [V] Voltage Temperature Coefficient -0.28%/°C Series Fuse Rating [A] Current Temperature Coefficient +0.0449%/°C Bifaciality -0.367%/°C Power Temperature Coefficient

**Material Characteristics** Dimensions

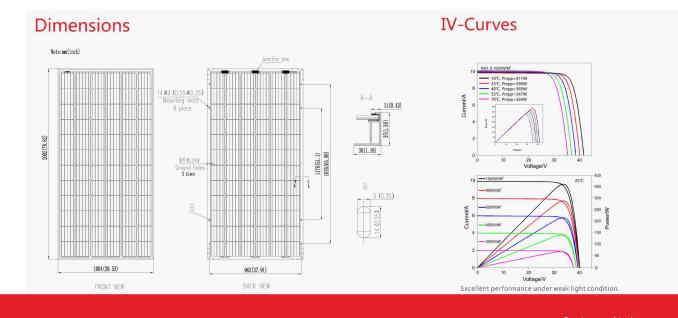
**Temperature Characteristics** 

2002×1004×35mm (L×W×H) Silver anodized aluminum profile High transparency, Antireflection coated, Semi-toughened safety glass, 2.0 mm EVA (Ethylene-Vinyl-Acetate) Cell Encapsulation Semi-toughened safety glass, 2.0 mm Back Glass 6×12 pieces bifacial monocrystalline solar cells series strings Junction Box Rated current≥13A, IP≥67

Cable&Connector Packaging Dimensions(L×W×H) Container 20' Container 40' Container 40'HC

2030×1110×1140mm

Length 500 mm, 1×4 mm<sup>2</sup>, compatible with MC4 System Design -40 °C to + 85 °C Temperature Range Maximum diameter of 25 mm with Withstanding Hail impact speed of 23 m/s Maximum Surface Load 5,400 Pa



Application class

Engineered in Japan www.vsun-solar.com

Regatta Solutions®

REGATTA DEVELOPMENT, INC 27122 PASEO ESPADA SUITE 901

SAN JUAN CAPISTRANO, CA 9267

WWW.REGATTASP.COM

O: 949.481.96705617 CA LIC. # B-974377

Line Side

LINE SIDE SOLAR

2514 JAMACHA RD. #502-182 EL CAJON, CA 92019

WWW.LINESIDESOLAR.COM

O: 619.333.6703

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Regatta Solutions®

REGATTA DEVELOPMENT, INC. 27122 PASEO ESPADA SUITE 901 SAN JUAN CAPISTRANO, CA 92675

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**Support Services** 

### Geotechnical Services

- Structural Analysis
- Layout & Design
- Post Driving
- **Pull Testing** Tracking System Installation
- Visual Inspection of Trackers Preferred Installer Network

Foundation Design Services

TDP 2.0 TURNKEY SOLAR TRACKER

With BalanceTrac

- Post, Rack & Module Installation Configuration of Tracker Controls
- Configuration of Network Controls Project Management
- PE Stamp
- Onsite Training Commissioning
- Remote Data Monitoring & Reporting

## Over 2.0 Gigawatts of Solar FlexRack Installed

an integrated solar company that offers customgned, fixed tilt ground mount and single-axis solar acking systems in the commercial, community solar and utility-scale solar mounting industries. Solar FlexRack offers full turnkey packages including neering, geotechnical, pullout testing, field, layout, and installation services to address the actual site onditions of an installation and provide a full scope of services from design to delivery and installation. Solar FlexRack has completed over 2 GW of solar cking installations in 40 states across America and

www.solarflexrack.com

LINE SIDE SOLAR

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TDP™ 2.0 TURNKEY SOLAR TRACKER With BalanceTrac

Tough, Reliable Tracker & Team of Experts at Your Service

Solar FlexRack's new TDP 2.0 Turnkey Solar Tracker with complete project support services for commercial and utility-scale solar installations introduces an advanced design featuring new BalanceTrac. This

installation cost-savings across your project budget.

next-generation technology enables solar power plants to increase energy yield while significantly reducing project risks. That translates to smart

RACK

The Only Tracker

Solution with: - Full Design

- Installation Services

#### Increased Energy Yield

TDP 2.0 with new BalanceTrac is efficiently designed to support more modules per row, a rotational range of up to 110°, and is compatible with 1,000 and 1500V modules. These key features enable significant energy production gains in solar power plants.

#### Greater Adjustability To Maximize Performance

TDP 2.0 Tracker has up to a 10% slope tolerance that can eliminate the need to level land. Independently driven rows provide easy access for mowing, cleaning and maintenance. Autonomous tables increase design flexibility to maximize ground coverage on irregular and non-adjacent lots. Programmable granular backtracking, snow shedding and new wind damper technology mitigate inclement climatic events and reduce risk of tracker damage. All of these features compound to increase system performance.

Tracking method

Backtracking

Tracking range

Ground coverage ratio

Tracking accuracy

Panels per tracker

String voltage

Drive type

Certifications

Dynamic load

**Snow management** 

North-south slope

North-south post spacing

East-west post alignment

tolerance

Post plumb Post twist

Tube twist

Trackers per controller

Panel configurations

Stow Angle

Solar Tracker

with BalanceTrac

Rain, wind, sleet, snow, heat

– every day and everywhere, our products are battling the

We perform ongoing

bonding, and life cycle.

Solar FlexRack trackers also

undergo wind tunnel testing

performed by RWDI, per American Society Of Civil

Engineers Standard ASCE 7

All Solar FlexRack systems

have gone through UL

point within the system

JL COMPLIANCE

extensive testing in these key areas: wind tunnel, structural load, electrical

TESTING

#### Installations Fly with Solar FlexRack No special equipment or additional steps are required to square your racking. The

proprietary design allows modules to easily slide into place, accelerating the process, and reducing installation time. Complete Support Services Reduce

## Project Risks And Costs

unmatched team of experts that will



Single-axis horizontal,

distributed drive

Smart backtracking customized to terrain for

maximum production

Configurable (0.33 to 0.50)

Up to 110° (± 55°)

Configurable

Up to 90

24 Volts dc

Controllers

Electrical

UL 2703

Up to 1,500 Volts

1 in portrait (crystalline)

4 in landscape (thin film)

2 in landscape (crystalline)

10 Years: Structural and

5 Years: Drives and

Limited progressive

damping technology

Programmable snow

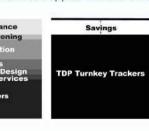
Up to 10%

± 1.5 inches

± 0.625 inches

A tracker solution that comes with all the critical associated support services and an significantly reduce your risks and project costs. Project management is simplified, redundancies are eliminated, and you have one highly-experienced supplier-instead of many.





#### More modules per row (up to 90)

Optimized for 1,000 & 1,500V modules

Programmable technology to mitigate

amount of tracker components and wear

Increased Yield & Reduced Costs

- Rotational range of up to 110° (±55°)
- Lower per-unit fixed costs for balance of Allows shorter piles
- inclement climatic conditions installations fly with no prying, adjusting Built to last, the robust design reduces
- Autonomous tables increase design flexibility to maximize land use Smart backtracking reduces row shading
- to optimize energy production Independently driven rows provide easy access for mowing, cleaning and other

maintenance

Innovative & Smart

Date: 6th February, 2020

Regatta Solutions, Inc. Attn: Mark Gilbreth 27122 Paseo Espada, Suite 901 San Juan Capistrano, CA 92675

#### Dear Mr Mark Gilbreth,

Based on the information provided for tan dirt type and location of the 2.176MW solar project located in Lost Hills CA., we can confirm as below:

For the bifacial modules VSUN390-72BMH-DG, the maximum rear side power gain is advised to be considered as 15% and the Short Circuit Current (Isc) at 15% rear side power can be 10.11A\*1.15=11.63A for the purposes of evaluating inverter specifications. Therefore, the Max. Input Current of the inverter should be more than 11.63A.

CAI DENGRONG (蔡灯荣)

**Vietnam Sunergy Joint Stock Company** Lot III-Dong Vang Area, Dinh Tram Industrial Zone, Hoang Ninh Commune, Viet Yen District, Bac Giang Province, Vietnam

www. vsun-solar.com

Vietnam Sunergy Joint Stock Company Lot III-Dong Vang Area, Dinh Tram Industrial Zone, Hoang Ninh Commune, Viet Yen District, Bac Giang Province,

The LineBOSS™ Sidebreak switch is the most robust, yet elegant sidebreak switch in the market today. Every LineBOSS™ component brings meaningful operator benefits for years to come. Features such as 1/4 inch steel phase base, stainless steel to brass bearings, silver plated copper reverse loop contacts and busbar blades mean efficient and smooth operation over a very long life; even in hostile environments where dust, humidity, corrosives and other industrial or natural contaminants play hovac with most. You'll be amazed with how much switch you can buy for the money. The LBS distribution switch is RUS accepted.

### Specifications:

Switch Ratings: Voltage Class: 15.5 kV, 25.8 kV & 38kV Continuous Current Class: 600, 900, 1200

Fault Close: 15 kA rms-asym: 5 X manual op-20 kA rms-asym: 3 X manual operation 30 kA rms-asym: 2 X manual operation Momentary current: 600 A: 40,000 A rms 10

cycles 25,000 A rms 3 seconds 900 A: 51,000 A rms 10 cycles 32,000 A rms 3 seconds 12000 A: 70,000 A rms 10 cycles 44,000 A rms 3 seconds Ice breaking: 3/4" (manual operation) Mechanical: 5000 cycles (open/close)

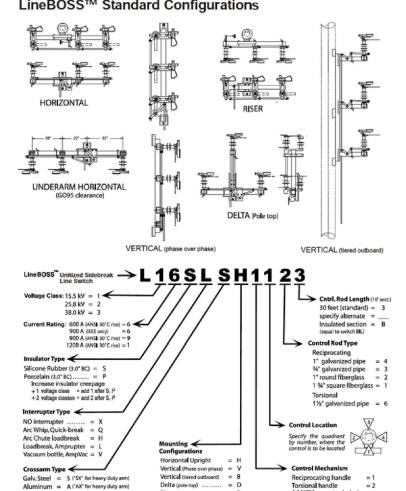
## **Standard Configurations**

- Horizontal (upright) Horizontal (center mount) Vertical (tiered outboard)
- Vertical (phase over phase) Horizontal (underarm)
- Raiser Delta (pole top)

## **LineBOSS™** 15 KV-35 KV Sidebreak Type, **Unitized GOAB Switch**



**LineBOSS™ Standard Configurations** 



INERTIA Engineering & Machine Works, Inc. 6665 Hardaway Road • Stockton, CA 95215

Tel: 800-791-9997

conforms to NEC codes fo electrically bonded and conductive systems. Testing is performed by TUV Rheinland in accordance with UL 2703. Certification covers both United States and Canada. Find out more about Solar FlexRack product reliabilit and testing at <a href="http://solarflexrack.com/prod">http://solarflexrack.com/prod</a> ucts/testing

Note: Consult the factory for any options not listed, including; arrestors, sensors, support brackets etc.

A Fax-back form can be found on the next page. Copy, fill-out and fax it back with your requirements. E-Mail: sales@inertiaworks.com

/ISIBLE/LOCKABLE LOAD BREAK SWITCH

Fiberglass = F ("FX" for heavy duty arm)
No Xarm = X
Customer specified loading (call factory)

\_\_\_\_\_

Structural materials Hot dip galvanized steel UV-rated engineering plastic, no lubrication needed Bolted - no welding, drilling or connections cutting required Ethernet, Zigbee, SCADA 31 kWh per tracker per year

Data feed Power consumption

-30 °C to +60 °C Operating temperature Wind 105 mph (Up to 130 mph) Stow 35 mph Snow load 10 psf (standard) Higher snow load available upon

five countries globally.

For more information on Solar FlexRack visit:

BIFACIAL MODULE GAIN \_\_\_\_\_\_

SOLAR PLEXRACK PREFERRED INSTALLER Learn more about our

Preferred Installer Program: http://solarflexrack.com/resourd /preferred-installer-program/